

Notice of Allowability

Application No.

09/966,054

Examiner

Jaison Joseph

Applicant(s)

MUJICA, FERNANDO A.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment after final filed on 05/08/2006.
2. ☒ The allowed claim(s) is/are 1,3-6,8-11,14, and 16-20 renumbered as 1-15 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Abdul Zindani on 05/22/2006.

The application has been amended as follows:

Claim 1 rewrite as: A method for gain control in a digital subscriber line system comprising an analog front end with a plurality of interleaved gain and filter stages, comprising the sequential acts of:

- selecting an order for said gain stages to be considered;
- initializing each of said plurality of gain stages to respective minimal gain setting, wherein each gain stage has a plurality of incremental gain settings; and for a first iteration of each gain stage in said selected order;
- increasing a corresponding gain setting by one increment;
- determining a peak average of a plurality of data frames received by said analog front end for a present gain setting; and
- if said peak average is greater than a peak target, reduce said gain setting by one increment and proceed to a next gain stage in said selected gain stage order;
- otherwise increase said gain setting by one increment and return to said act of determining a current peak average, wherein said selecting an order for said gain

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stages to be considered further comprises; determining a loop type of in said subscriber line system; and selecting a gain stage order corresponding to said loop type.

Claim 11 rewrite as: A method for selecting a gain distribution for a plurality of interleaved programmable gain amplifiers of an analog front end in a digital subscriber line system, comprising:

selecting a sequential order for which programmable gain amplifiers are determined;

initiating each of said programmable gain amplifier settings to a lowest setting, wherein each said programmable gain amplifier has a plurality of incremental gain settings which include a maximum setting; and

for a first iteration beginning with a first of said selected sequential order and repeating for each programmable gain amplifier;

selecting a highest incremental gain setting which provides a nonsaturated signal condition, wherein said signal condition is determined by a peak average for a plurality of data frames received by said analog front end,

wherein said selecting a sequential order further comprises : determining a loop type of in said digital subscriber line system; and selecting a predetermined sequential order corresponding to said loop type.

Claim 18 rewrite as: An apparatus for selecting a gain distribution in a subscriber line system, comprising:

an analog front end having a plurality of serially coupled gain stages and adapted to receive a data signal;

an analog-to-digital converter adapted to receive a data signal from said analog front end; and

a processor coupled to said analog-to-digital converter and adapted to determine a loop type of in said subscriber line system and select a gain setting of each of said gain stages in a predetermined order corresponding to said loop type, said processor further adapted to execute instructions for selecting a highest incremental gain setting which provides a nonsaturated signal condition based on a peak average for a plurality of data frames received by said analog front end.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: Claims 1,3 – 6, 8 – 11, 14, and 16 – 20 are allowable over prior art of record. The prior art of record failed to teach a method for gain control in a digital subscriber line system comprising an analog front end with a plurality of interleaved gain and filter stages, comprising the sequential acts of: selecting an order for said gain stages to be considered; initializing each of said plurality of gain stages to respective minimal gain setting, wherein each gain stage has a plurality of incremental gain settings; and for a first iteration of each gain stage in said selected order; increasing a corresponding gain setting by one increment; determining a peak average of a plurality of data frames received by said analog front end for a present gain setting; and if said peak average is greater than a peak target, reduce said gain setting by one increment and proceed to a next gain stage in said selected gain stage order; otherwise increase said gain setting by one increment and return to said act of determining a current peak average, wherein said selecting an

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order for said gain stages to be considered further comprises; determining a loop type of said subscriber line system; and selecting a gain stage order corresponding to said loop type as claimed in independent claim 1 and similarly claimed in independent claim 11 and 18. Thus the claims 1,3 – 6, 8 – 11, 14, and 16 – 20 are novel an unobvious over prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison Joseph whose telephone number is (571) 272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaison Joseph
05/22/2006

A handwritten signature in black ink, appearing to read "Jaison Joseph", with the date "5/24/06" written to its right.

DACHA
PRIMARY EXAMINER